THE 7TH EUROPEAN WORKSHOP OF VERTEBRATE PALEONTOLOGY

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ABSTRACTS VOLUME AND EXCURSIONS FIELD GUIDE

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- DEPARTMENT OF GEOLOGY, BABEŞ-BOLYAI UNIVERSITY, CLUJ-NAPOCA
- "ŢĂRII CRIŞURILOR" MUSEUM, ORADEA
- UNIVERSITY "LUCIAN BLAGA" SIBIU
- THE HAŢEG DINOSAURS GEOPARK ASSOCIATION

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Middle Jurassic dinosaur tracks from Morocco – Facts and fiction

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Dinosaur fooprints from the Central Atlas Mountains of Morocco have long been known (Plateau et al., 1937) but not been study until 1980 by Dutuit & Ouazzou. The latter formerly described a large sauropod trackway as a new ichnospecies *Breviparopus taghbaloutensis*, the tridactyl footprints from the Demnat site were only briefly mentioned. Ishigaki (1985) attributed a trackway with manus prints from the same site to swimming sauropods.

The Middle Jurassic dinosaur footprints from Guettioua Formation in the Iouaridene Basin (Demnat, High Atlas, Morocco) are reviewed. Several tracklevels have been detected that were left in overbank deposits with abundant mud cracks. The large sauropod tracks (*Breviparopus taghbaloutensis*) have been reexamined . Neither manus nor pes imprints show traces of claws (as figured in Ishigaki, 1985 and Dutuit & Ouazzou, 1980), most of the manus imprints are deformed by the pushing action of the pes. The manus only trackways (swimming sauropods of Ishigaki) could not be found, all of the observed trackways consist of manus and pes sets. The presence of oscillation ripple marks on the tracklevels indicating a waterdepth of no more than 50 cm serioulsy questions Ishigaki's interpretation of swimming sauropods.

The trackway assemblage consists of small and large sauropods as well as three different morphotypes of theropods. The smallest form is attributed to the ichnogenus *Carmelopodus*, whereas the largest footprints belong to a hitherto unknown ichnogenus. One tracklevel shows six parallel trackways of medium-sized sauropods.

Another site in the vicinity of Isseksi (Syncline of Taguelft) has yielded a large slab with at least seven trackways of a small theropod assigned to *Carmelopodus*. They are situated at the base of the Guettioua Formation and therefore coeval with the trackbeds in the Demnat area. The sandstones and red bed sediments have been formed in a fluvial environment with channels and overbank deposits, the latter containing abundant bones of sauropods. Close to the village Bin el Ouidane, lacustrine intercalations in the Tillouguitte Formation show ten parallel trackways of small sauropods.

The Demnat and Bin El Ouidane sites with several parallel trackways of subadult dinosaurs demonstrate for the first time social behaviour in sauropods as early as the Middle Jurassic.

The presence of *Carmelopodus* in the Demnat and Isseksi area, as well as in the USA and England (Lockley & Meyer, 2000) confirms the age assignement of the contintental sediments (Bathonian) in Morocco (Jenny et al. 1981) .

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